

TROPICAL RAINFALL MEASURING MISSION

October 4, 1999 - October 10, 1999

DOY 277 - 283

Day of Mission 676 - 682

TRMM MISSION OPERATIONS

- TRMM is flying in the -X Forward direction as of 99-270, at 11:18:39z.
- The next Yaw maneuver is scheduled for October 23rd (99-296).
- Delta-V maneuver #128 is scheduled for October 12th (99-285) using the ISP thrusters.
- The Beta angle range for 99-284 to 290 is -41.1° to -22.3° .

TRMM SUBSYSTEM OPERATIONS

Attitude Control System (ACS)

Delta-V maneuver #126 was successfully conducted on 99-277 at 14:58:00z and 15:44:30z, for durations of 39.0 and 25.375 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) for burn 1 and 2 was 39.4% and 31.5% respectively (60.6% and 68.5% on time). The remaining fuel is 685.819 kg, and the final apogee and perigee height is 354.87 km x 347.38 km.

The TDRS 171 EPV failed the continuity limit for position and velocity on 99-280. Trending showed the newly uplinked vector was off from the propagating vector by 922 km in the Y position (limit is 850 km). Other times were trended and the two vectors consistently showed position differences of over 850 km. On 99-281, the continuity limits were widened and the TDRS 171 EPV passed continuity with no problems.

Delta-V maneuver #127 was successfully conducted on 99-281 at 15:00:38z and 15:46:24z, for durations of 40.5 and 26.125 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) for burn 1 and 2 was 38.6% and 32.1% respectively (61.4% and 67.9% on time). The remaining fuel is 684.270 kg, and the final apogee and perigee height is 354.86 km x 347.39 km.

The ESA experienced Sun interference in quadrants 1 and 3 during 99-278 through 99-281 and Sun and Moon interference in 1 and 3 during 99-281 through 99-283. The ACS performed nominally during the transitions between 3 and 4 head control.

Flight Data System (FDS)/Command & Data Handling (C&DH)

The frequency standard continues to drift in the negative direction. The frequency standard offset is currently set to x'76F' with a current drift rate of $-2.2 \mu\text{s/hr}$. The current UTCF value is 31535996.858936 sec with a current drift value of $-666 \mu\text{s}$.

On 99-277 during the 02:44z event, data storage operations could not be completed before LOS due to a severely degraded Q-channel (Event #135 and TTR #21424) and a state manager crash

on both string 1 and 2. A blind acquisition was scheduled at 03:48z, but the FOT could not acquire the spacecraft. As a result, the instrument recorders overflowed. The following is a list of the overflow times.

Duration of Overflow	VR	# VCDU Lost	Day Total	% Captured for the Day
99/277/03:50:01-04:53:53z	3	3471	78371	95.76
99/277/03:52:15-04:53:48z	4	38960	906205	95.88
99/277/03:52:16-04:53:53z	5	3538	82118	95.87
99/277/03:52:21-04:53:53z	6	20759	482783	95.88

Q-Channel restarts occurred on 99-277 at 08:01:25z, 99-278 at 11:26:08z, 99-281 at 06:15:23z, and 99-282 at 19:42:08z.

The Memory Scrub (MS) task registered 'Not Present' in Health and Safety (HS) on 99-277 at 07:12z due to a large dataset release.

An EDAC multi-bit error occurred on 99-279 at 03:42:01z.

A framer error occurred on the S/C processor on 99-282 at 23:39:20z.

Reaction Control Subsystem (RCS)

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

Power Subsystem

The Power subsystem is operating nominally.

Electrical Subsystem

The Electrical subsystem operated nominally during this period.

Thermal Subsystem

The Thermal subsystem operated nominally during this period.

Deployables Subsystem

The Deployables subsystem performed nominally during this period.

RF/Communications Subsystem

The RF/Communications subsystem performed nominally during this period.

A generic late acquisition occurred on 99-278 during the 16:18z event on TDW/SA2 (Late Acq #39). All data was recovered.

SPACECRAFT INSTRUMENTS

CERES

CERES personnel are developing a plan for operating the instrument with the +15 V DAA anomaly. The CCR which involves creating and testing TSMs to monitor the CERES current is expected to be closed out by the end of October.

LIS

LIS performed nominally during this time period.

Due to a ground system problem, there was a recorder overflow on 99-277. See the FDS section for exact times of the overflow.

PR

PR performed nominally during this time period. The list of Internal Calibration times over Australia in which PR was not radiating is listed below:

1999/277:14:10:20 - 14:15:25z
1999/277:20:40:52 - 20:43:05z
1999/278:21:03:51 - 21:05:59z
1999/279:13:22:11 - 13:24:39z
1999/279:19:52:25 - 19:54:38z
1999/280:12:13:15 - 12:14:37z
1999/280:20:14:58 - 20:17:05z
1999/281:19:03:24 - 19:05:35z
1999/282:11:22:37 - 11:26:10z
1999/282:17:52:13 - 17:53:39z
1999/282:19:26:17 - 19:28:25z
1999/283:18:14:52 - 18:17:02z

Due to a ground system problem, there was a recorder overflow on 99-277. See the FDS section for exact times of the overflow.

TMI

TMI performed nominally during this time period.

Due to a ground system problem, there was a recorder overflow on 99-277. See the FDS section for exact times of the overflow.

VIRS

VIRS performed nominally during this time period.

Due to a ground system problem, there was a recorder overflow on 99-277. See the FDS section for exact times of the overflow.

GROUND SYSTEM

All Y2K rollover testing has been completed on string 3, and system cleanup is being performed. String 3 operational readiness testing will begin after the cleanup and is expected to last for approximately 1-2 weeks. String 2 remains the prime Mission Planning string.

No UPDs were received during the 17:06z event on 99-280 due to a CCS failover at NCC. The NCC outage occurred from 17:10z to 17:21z and the problem was assigned TTR #21445.

Event Reports

#135: SSR Overflow

Generic Late Acquisition Reports (for TTRs 19639)

#39: TDW/SA2; 99-278 at 16:18z event; 39 seconds.

New Anomaly

No new anomaly reports were written during this period.

Recurring Open Anomalies

No recurring anomalies were seen during this period.

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